

Notice of Allowability	Application No.	Applicant(s)	
	10/802,024	GRIDNEV ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/14/2005.
2. ☒ The allowed claim(s) is/are 1,2,4-8,10-17 and 24-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>09/26/05</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|--|---|

DETAILED ACTION

1. This Office action is in response to the Response after Final Rejection filed September 14, 2005. Claims 3 and 23 were canceled and claims 1-2, 4-17, and 24-33 are now pending.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CAR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ms Gail A. Dalickas on September 30, 2005.

3. The application has been amended as follows:

Amend the following claim,

- 1. (Currently amended) A process for polymerizing one or more vinylically-unsaturated monomers to form a polymeric product, comprising:

contacting said vinylically-unsaturated monomers with a chain transfer catalyst and a hydrogen atom donor molecule in the absence of conventional free radical initiators, at a temperature from about room temperature to about 240°C, wherein said hydrogen atom donor is selected from dihydronaphthalene, silicon hydrides, tin hydrides, organometallic hydrides,

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benzylic alcohols, hydroquinones, alkyl ether hydroquinones, and benzhydrol. -- ;

Claim 4, line 1, change "wherein the" to --wherein said--;

Claim 5, line 1, change "The process of Claim 1 or 2 wherein the" to --The process of Claim 1 or 2, wherein said--;

Cancel claim 9 without prejudice;

Claim 10, line 1, change "The process of Claim 9, wherein the" to --The process of Claim 1, wherein said--;

Claim 15, change "The process of claim 12 or 14 wherein the" to --The process of Claim 12, wherein said--;

Claims 16-17, line 1, change "wherein the" to --wherein said--;

Claims 30-32, line 1, change "wherein the" to --wherein said--;

Add the following claim,

--**34**. (New) The process of Claim 14, wherein said resulting product is terminally unsaturated. --

Allowable Subject Matter

4. Claims 1-2, 4-8, 10-17, and 24-34 are allowed.

5. The following is an examiner's statement of reasons for allowance:

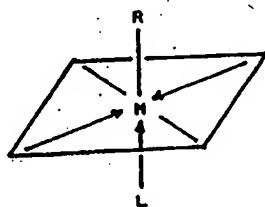
The present claims are allowable over the closest references: Hawthorne (WO 87/03605) and Muir et al. (US 5,684,101).

A process to polymerize one or more vinylically-unsaturated monomers, comprising

contacting	the vinylically-unsaturated monomers,
	a chain transfer catalyst, and
	a hydrogen atom donor molecule selected from dihydronaphthalene, silicon hydrides, tin hydrides, organometallic hydrides, benzylic alcohols, hydroquinones, alkyl ether hydroquinones, and benzhydrol
in the absence of conventional free radical initiators	
at a temperature from about room temperature to about 240°C	

(summary of claim 1)

Hawthorne discloses an oligomer obtained by the free radical polymerization of unsaturated monomers in the presence of a chain transfer agent comprising a transition metal complex of a metal cation and at least one chelating agent, wherein the transition metal complex is represented by the general structure of



wherein R is hydrogen or an organic group; L is a ligand for controlling the stability and electron transfer properties of the transition metal complex having cobalt and a bis(dimethyl glyoxime) ligand (abstract; page 3, lines 5-17; page 4, lines 15-17 and 29-31; page 5, lines 7-8) Hawthorne further disclose that **L can be water or an alcohol** which reads on hydrogen atom donor molecule (page 5, lines 23-31). Attention is drawn to Example 1, wherein methyl methacrylate (MMA) in benzene is heated in the presence of a cobalt complex obtained by the

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contact of cobaltous acetate tetrahydrate, dimethylglyoxime, and pyridine in hydrogen to obtain oligo-MMA. It is noted that no conventional initiator such as AIBN used in Example 2 is used in oligomerization of the unsaturated monomers. However, Hawthorne does not teach or fairly suggest a process comprising the specific hydrogen atom donor molecule.

Muir et al. disclose a process for solution polymerization of MMA in the presence of an azo initiator and Co(II)(diphenanthrenequinone dioxime-diBF₂) as a catalytic chain transfer agent in methylethyl ketone(MEK) (Examples 1-3, C4). However, Muir et al. do not teach or fairly suggest a process comprising the specific hydrogen atom donor molecule in the absence of the conventional free radical initiators .

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

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LING-SUI CHOI
PRIMARY EXAMINER

October 5, 2005